

## ABSTRACT

Ordered, monodisperse macroporous polymers, their corresponding ordered, monodisperse colloids, and methods of preparing them are disclosed. The methods use an ordered, monodisperse colloidal template to define the polymer pore morphology, which in turn acts as a mold for the growth of a new ordered, monodisperse colloid. The macroporous polymer may be prepared with either spherical or ellipsoidal pores from a wide variety of polymeric systems. The new ordered, monodisperse colloid may be grown from a wide variety of materials including ceramics, semiconductors, metals and polymers. These materials are potentially useful in optical, micro-filtering and drug delivery applications.